SS 582 : Part 1 : 2020
(ICS 11.040.55)

SINGAPORE STANDARD

Specification for thermal imagers for human temperature screening

– Part 1 : Requirements and test methods

Singapore Standards Council

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The content of this Singapore Standard was approved on 14 May 2020 by the Biomedical and Health Standards Committee (BHSC) under the purview of the Singapore Standards Council.

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BHSC set up the Technical Committee on Medical Devices to oversee the preparation of this standard. The Technical Committee consists of the following members:

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The Technical Committee set up the Working Group on Thermal Imagers to prepare this standard. The Working Group consists of the following experts who contribute in their *individual capacity*:

		Name
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Secretary	:	Mr She Long Huai
Members	:	Mr Jeremy Ang
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The organisations in which the experts of the Working Group are involved are:

ALX Pte Ltd
Defence Science and Technology Agency
Fluke South East Asia Pte Ltd
Kandang Kerbau Women's & Children's Hospital
Nanyang Technological University
National Metrology Centre
STELOP Pte Ltd
Tan Tock Seng Hospital

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Foreword

This Singapore Standard was prepared by the Working Group on Thermal Imagers set up by the Technical Committee on Medical Devices under the purview of BHSC.

The 2013 edition of SS 582 resulted from the review of the Technical Reference, TR 15 : Parts 1 and 2. This is a revision of the 2013 edition. The revised standard comprises the following two parts under the general title, 'Specification for thermal imagers for human temperature screening':

– Part 1: Requirements and test methods

– Part 2: Implementation guidelines

A summary of the changes in this revision of Part 1 is given as follows:

- A new definition for "Thermal imager system";

- A new clause under "Performance requirements" to define the spatial resolution.

Part 1 addresses general requirements for the thermal imager to be used for non-invasive human temperature screening of large groups of individuals in an indoor environment, regardless of the model and configuration (e.g. using either internal or external temperature reference, with or without temperature readings, etc.). The performance requirements and the test methods are developed based on practical application requirements and studies carried out by various organisations.

To enable the characterisation test results to be reproduced, the critical performance parameters are given under specific reference conditions using a blackbody source as a known temperature reference. Users of this standard should be aware that there are other effects on the critical parameters, particularly, the effect of actual environmental conditions, which will impact the use and characterisation of the thermal imagers.

The standard is not intended to qualify an individual to set up a temperature screening operation, to use a thermal imager to conduct screening of human temperature, or analyse the data. The use of this standard does not preclude users from potential errors and misinterpretations of the data derived from thermal imagers. It is therefore necessary that users establish a set of operational procedures. Users may refer to SS 582 : Part 2.

In preparing this standard, reference was made to the following publications:

1. ASTM E1965-1998(2016) – Standard specification for infrared thermometers for intermittent determination of patient temperature

2. American College of Clinical Thermology Position Paper – Recommended screening protocol for the efficient, rapid recognition of hyperthermic individuals with SARS using clinical digital infrared thermal imaging in public places, 2003

3. IEC 80601-2-59:2017 – Medical electrical equipment – Part 2-59 : Particular requirements for the basic safety and essential performance of screening thermographs for human febrile temperature screening

4. ISO/IEC 98-3:2008 Guide to the expression of uncertainty in measurement (GUM)

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "Mature Standards". Mature Standards will not be subject to further review, unless there are requests to review such standards.*

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3. *Compliance with a SS or TR does not exempt users from any legal obligations.*

Specification for thermal imagers for human temperature screening – Part 1: Requirements and test methods

1 Scope

This Singapore Standard specifies the performance requirements and test methods for characterising thermal imagers used for non-invasive human temperature screening of large groups of individuals under indoor environmental conditions.

2 Normative references

There are no normative references in this standard.